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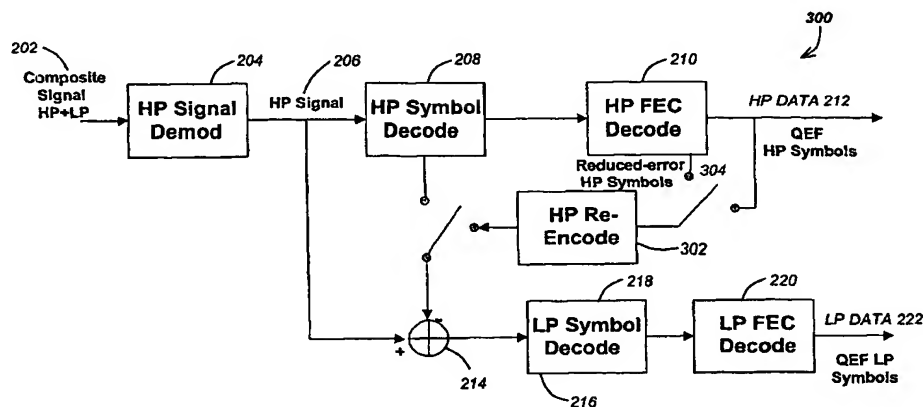
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**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: IMPROVING HIERARCHICAL 8PSK PERFORMANCE



(57) Abstract: A method and receiver systems for demodulating and decoding a hierarchically modulated signal, e.g. an 8PSK signal, are disclosed. An exemplary method includes demodulating and processing (502) the hierarchically modulated signal (202) to produce symbols (212) from the first modulation at the first hierarchical level, applying information (504) from a plurality of the symbols from the first modulation at the first hierarchical level in subtracting (214) from the demodulated hierarchically modulated signal to obtain the second modulation at the second hierarchical level and processing (506) the second modulation at the second hierarchical level to produce second symbols (222) from the demodulated second signal. The hierarchically modulated signal comprises a non-uniform 8PSK signal. Applying the information from the plurality of the symbols from the first modulation can be achieved by applying the symbols after error correction. A decision-directed demodulation of the first modulation can also be used to further improve performance.



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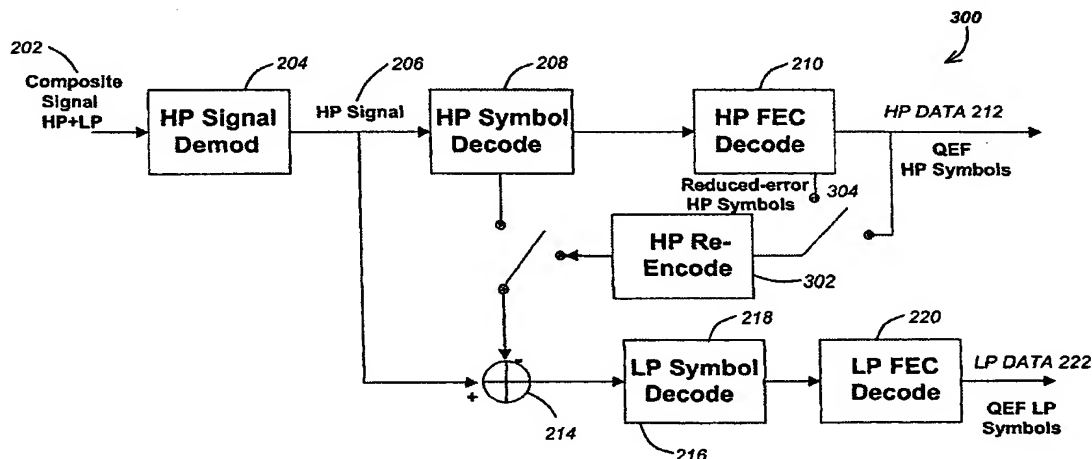
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/20862

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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : H04L 23/02, 27/10, 27/22; H03M 13/03

US CL : 375/261, 280, 324, 329; 714/786

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,903,546 A (IKENA et al) 11 May 1999 (11.05.1999), column 12, line 58 - column 14, line 20	1-16
A	EP 1 054 537 A1 (Kato et al) 22 November 2000 (22.11.2000), paragraphs 0002-0004, 0011-0014 and 0018-0026	1-16
A	EP 1 081 903 A1 (Shiraishi et al) 07 March 2001 (07.03.2001), paragraphs 0014-0026	1-16
A	US 2002/0067744 A1 (FUJII et al) 06 June 2002 (06.06.2002), paragraph 0005	1-16

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
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"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

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